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I therefore inverted the separated Twig and held it perpendicular with the cut end downward, and found, that that little they were expos'd to the Air in an upright posture, had so very much check'd the motion of the Sap, that I concluded they would not bleed at all; and yet striking off their tops, and making Poles of them, I found some of them, if not all, that I chanc'd to try, as I remember, would shew moisture: But I am convinced since, that it was rather some unheeded accident, as violently bending them, or perhaps the warmth of my hand and season, or place, which caused this new motion of Sap, than merely the striking off their Tops.

Some Communications, about an early Swarm of Bees, as also concerning Cyder; Descent of Sap; the Season of Transplanting Vegetables: Sent to the Publisher out of Herefordshire by that Intelligent Gentleman, Richard Reed Esq; in a Letter dated March 14. 1679. at Lugwardine.

ON Thursday last, the 9th of Instant, there was at the next house to mine a *Swarm of Bees*. It was a very fair day to entice them; but else *we* never have them till the middle of *May*. I had it from the owner, one *Parry*, now in my work, and I enquir'd of him, whether they did not all leave the Hive, as sometimes they do unseasonably, either for want of food, or out of distaste? He told me, no, but there are as many left behind as came forth. But I (who have sometime studied the Regiment of that little industrious wise creature) do conceive, that Poverty drew them abroad to seek their fortunes; the infinite Wisdom having imparted such a Providence to that little Commonwealth, as to send part of their Company abroad to shift, before their whole stock of food shall be consumed, to the destruction of them all, (*Deus Maximus in Minimis.*)

And now to what I formerly promised. I have read that excellent Book of Mr. *Evelyns*; especially his *Pomona*, and have learnt many things out of it, which I before had not observ'd; and particularly the new way of Planting therein mention'd out of the papers of my Ancient and worthy Friend Mr. *John Buckland*, whom I do never remember but with very great respects: As also the New way of making *Pepin-Cyder* by Sir *Paul Neil*, to whom (unknown) I do, and our whole Country ought to return very many thanks. For certainly, the reasons, rendred by him of the harshness and the cure of it in
Pepin-

Pepin-cider, are very sound, and may be used to the advancement of *all* our Ciders. I had the last year two parcels of Pepin-Cider; of the *one* but few bottles, and that was the Drop-pings of the *Cheefe* (so we call the Apples when ground and prest) after we had wrung it as far as we could, and that comes away without any mixture at all of the Pulp of the Apple, being that *Flying Lee* mention'd by Sir *Paul*. The *other*, a Vessel containing two *Hogsheads*; and *that* (following the reason of the directions he giveth, but not having Vessels to draw it off that *Flying Lee* when settled, and to pursue those directions exactly,) I strained thorow a course cloth into the Vessel, and by that means eas'd it of much of that Lee. Both were excellent good, both for Colour and Taste; but the Bottles best, being the most delicious and luxuriant Cider, and most pleasing both for colour and tast, that ever I knew; yet I have had as good *Red-strake* as ever I drank in any place.

I do commend, for the advancing of Cider in richness both for Tast and Colour, a New Cask; provided it be made of Timber very well season'd: otherwise it may spoil it utterly. The Vessel I mention'd, wherein I had my Pepin-Cider, was such. And I have often tried it, and found that sort of Cask to improve Cider.

The best Cider, I ever had, was *Red-strake* grafted upon a *Gennet-moyle-stock*. For, as those kinds do best agree, and the Trees so grafted seldom Canker (as do the old *Red-strake* upon a Crab-stock) so the Fruit is far more ingenuous and milder, and being ripe, both rich and large and good to eat, and the Cider is more smooth, and abates in strength and harshness of that on the Crab, and needs less of mellowing before making; the stock in degree altering and reclaiming the nature of the Fruit. For, as an Apple doth best grafted on a Crab, which gives acrimony and quickness to the Fruit; so a Crab (and the *Red-strake* is no other) grafted on an Apple, receiveth thence gentleness, and softness, and largeness, and an excellent alloy to the sharpness, and (as Mr. *Evelin* calls it) the *wickedness* of the Fruit. Which (being but a discourse of the Interchange between the Saps both of Stock and Graft) puts me in mind to beg from you the judgement of those Gentlemen of the *R. Society*, that bend their thoughts to this way of knowledge concerning the *descent* of the Sap in Winter, which is now

generally denied : Though I, as yet, cannot assent to it; thinking it an Heresie in Husbandry, obstinately to deny the descent of the Sap. Besides many other Experiments to prove that descent, this I have observed, which I never heard any other did : That the Graft hath influence either to corrupt or to heal the Stock ; nay further, to alter and change the very nature and way of the growing of the Root in the earth ; which I cannot see how it should do but by sending down its Sap thither. I have by certain Observation found, that Crab-stocks grafted with some sorts of Fruit, which the Soil liketh not, they not the Soil, will (not one or two, but all of that sort) Canker, not only in the Graft, but the Stock also : which if you graft again, upon the former Graft, with a fruit liking to the Soil, will all heal, and so become Trees. And further, certain it is by my Observation, that 20 Pear-stocks being wild, grafted young with the same sort of Pear, and 20 with another ; the Roots of each of them of one sort will grow alike ; and so those of the other. Generally those that naturally grow high, as the *Bare-land-Pear*, root deep, and all do so : Those whose Heads are bushy and thick, as the Summer *Bon Chrestien*, their Roots run wide, and are matted below ; and all are so. This diversity of the way of growing of the Root must be by grafting, and could not be but by the intercourse of Sap, which it receiveth from the Graft ; and that cannot be, but by the return of the Sap.

But in this I desire rather the judgement of others, than give mine own, because it is of a constant use to me, to be well assured herein. For if the Sap returns not, then may I prune or lop my Trees in any time of the year without loss of Sap, which I take to be their Blood, and that wherein their life consists.

Concerning the *Season of Transplanting*, which some direct to be in *October* : I did think, and used to do so also ; but for these later years, I never begin to plant till *Valentine's* day, though I have a mild and good Winter, as this was. And I approve late Planting before early ; and as yet, however the Spring or Summer often do prove, loose fewer by miscarriage. The *Cold* in the Winter kills more than the *Drought* in Summer ; however it proveth (as the last of 1669 was the worst I have known ;) only the Cold does the work, and we impute it to the drought ; because they languish until Summer upon the fatal blow they receive by the Cold in Winter ; and then

then dye. For, either we take our Stocks out of Woods, or out of Nurseries ; in either place they lye warm. If you then in *October* transplant them, you expose them on a sudden to an open Air, and adventure them; being weak , to a long and perhaps cold winter ; which they cannot bear, no more than our Men un-used to a Voyage beyond the Line, can the heat. Add hereunto , that I can relieve them against the Drought, by watering and covering the ground, to keep it cool : But there is no fence against the Frost ; which many times gets into the Roots, and kills, so that they never spring ; or, if they do, yet pulingly, and dye in the Spring ; or, if they survive , as many do, yet come on very slowly and pitifully. For, the Bark does cleave to the wood by reason of the cold , which dries and clings them together, that like an hide-bound horse, they will not admit the Sap, which the Root would send up ; and other Suckers grow out at the earth, and the Tree grows dry, and turns red : All which discovers the Obstruction in the receiving the Sap, which would come from the root ; and then we are forc'd to score and loosen the Bark as we can. Now on the other side, if the Summer prove moist, the danger and fear of late setting is over, and they will thrive and come forward a main ; if otherwise, I seldom see but they alwayes keep green and fresh, being maintain'd in life and verdure by the Sap they receive in the beginning of the *Spring*, before they be transplanted.

This therefore I do (which I submit to better judgments and experience :) In the dead of Winter I prune and cut the Tree I intend to transplant, as I would have it be, to the end to lose nothing of its strength when I transplant. Then I suffer it to abide untouch'd by the Spade till *Valentine's* day, and then remove it after it hath taken in somewhat of the Spring. This, I think, will cause it to take better and grow better. Niceties in Grafting or Planting I will not trouble you with, nor care I for ; but this I thought good to offer to the experience of others (having found it far best in mine) because it is that which is of daily and general use ; and if this season be found best, it will be that which will be of great advantage to this kind of Husbandry.

In Transplanting I am very careful to preserve and set the Roots as large as I may ; supposing the larger the Root, the more of strength and Sap it contains, and so will advance the
more

more the growth of the Tree; since every thing grows in proportion to the Root beneath: But I am doubtful in this, whether I do well or ill, and desire the judgement of others. For, I have heard from some Planters, and afterwards from a Knight who had experience therein, that Roots cut short doe best, as sending forth New roots, which draw sap and nourishment best. And we see that *Moyle's* set on slips that have no roots, come to a Tree sooner And I have oft observed, that a *Moyle* Transplanted after it hath taken root does not live so certainly, or thrive so well as a slip newly set. But I have gone beyond the bounds of a Letter.

This Letter being imparted to an Ingenious Inquirer into such things, he was pleased to return some of his considerations thereupon, which are like to be published in our next.

Some Observations, touching Colours, in order to the Increase of Dyes, and the Fixation of Colours; generously imparted by the Author of the Four above-mention'd Letters, who annexed them to that of Februar. 15. 1670.

Two things, I conceive, are chiefly aimed at in the Inquiry of Colours, which subject you desire my thoughts of; the one, to increase the *Materia Tinctoria*, and the other, to fix, if possible, those colors, we either have already, or shall hereafter discover for use. As to the *first*, Animals and Vegetables, besides other Natural Bodies, may abundantly furnish us. And in both these kinds *some* Colours are *Apparent*, as the various colours of Flowers, and the juices of fruits, &c. and the *sanies* of Animals: *others* are Latent, and discovered to us by the effects, the several Family's of Salt and other things may have upon them. Concerning the *Apparent* colors of Vegetables and Animals, and the various effects of different Salts in changing them from one colour to another; we have many Instances in *M. Boyle*. And if we might, with the good leave of that Honourable and Learned person, range them after our fashion, we should give you at least a new Prospect of them, and observe to you the conformity and agreement of the effects of Salt on the divers parts of Vegetables: *Viz.* 1. That *Acid* Salts *advance* the colours of Flowers and Berries, that is, according to the Experiments of *M. Boyle*, they make the infusions of *Balaustinum* or Pomgranat-Flowers, Red roses, Clove-jilly flowers, Meferion, Pease-bloom, Violets, Cyanus